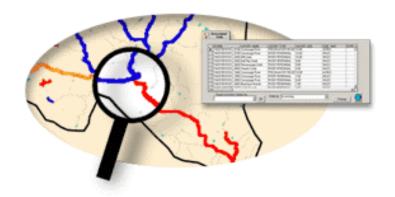
# Assessment Database Version 2 Reach Indexing Tool (ADB v.2 - RIT) Tutorial



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### Introduction

The EPA Office of Water provides several tools that help states manage water quality assessment data for Section 305(b) Clean Water Act Reporting. The first tool is the 305(b) Assessment Database version 2 (ADB v.2). The ADB v.2 is available for three different database platforms: Oracle, SQL Server, and Microsoft Access. You can learn more about the ADB v.2 at <a href="http://www.epa.gov/waters/adb">http://www.epa.gov/waters/adb</a>.

Another popular tool is the NHD-RIT (National Hydrography Dataset Reach Indexing Tool). The NHD-RIT is an ArcView 3.x tool that allows users to delineate and georeference 305(b) data to the National Hydrography Dataset (NHD). You can use the NHD-RIT to create event tables (maps) that will store geographic locations of your 305(b) assessment units. The NHD-RIT is a part of the NHD ArcView Toolkit, which can be downloaded from <a href="http://www.epa.gov/owow/monitoring/georef/training.html">http://www.epa.gov/owow/monitoring/georef/training.html</a>. You can also download NHD-RIT user documentation and training materials from this site.

This ADBv2-RIT utility was designed to provide an ArcView interface that allows you to use event tables georeferenced to NHD to enter information (such as assessment unit size and name) directly into the ADB v.2. The ADBv2-RIT utility can also be used to check the waterbody sizes in the ADB v.2 against size information available from NHD. You can download the ADBv2-RIT extension from <a href="http://www.epa.gov/waters/adb.">http://www.epa.gov/waters/adb.</a>

In order to perform this tutorial you will have to install the NHD Toolkit and the ADBv2-RIT. To install the NHD Toolkit, simply download the installation package and double click on the .exe file. To install the ADBv2-RIT extension, simply place the ADBv2-RIT.avx file in your ArcView EXT32 directory (a typical path for this is C:\ESRI\AV\_GIS30\ARCVIEW\EXT32). A User Guide for the ADBv2-RIT is also available.

### **Goals of this Tutorial**

The ADBv2-RIT utility allows you to update your Assessment Database while viewing your 305(b) data in ArcView. The purpose of this tutorial is to step you through the process of using the ADBv2-RIT to view, add, and update existing 305(b) assessment units in the Assessment Database.

### Setup

The ADBv2-RIT utility uses an ODBC data source on your system to communicate with the ADB v.2 data file from ArcView. The utility looks for a data source named "ADB2\_RIT". Use the following procedure to set up an ADB2\_RIT data source on your computer.

- 1. For Windows NT, 95, 98, and 2000, open the Control Panel (**Start->Settings->Control Panel**). For Windows XP, click **Start->Control Panel**.
  - A. For Windows NT, click on the **ODBC** icon.
  - B. For Windows 95 and 98, click on **32 bit ODBC**.
  - C. For Windows 2000, click on **Administrative Tools->Data Sources** (**ODBC**)
  - D. For Windows XP, click **Performance and Maintenance -> Administrative Tools->Data Sources (ODBC)**
- 2. Click on the **User DSN** tab, and choose **Add** to add a new database.
- 3. If you are using the ADB v.2 Oracle version:
  - A. Select the **Microsoft ODBC for Oracle** from the list of drivers. Click **Finish**.
  - B. Enter the following information (you may need to ask your Oracle DBA for this information):

Data Source Name: ADB2\_RIT

**Description:** Network Location for Oracle

**User Name:** *ADB User Name* (default is ADBUSER) **Server:** *ADB* (or database alias provided by DBA)

C. Click OK.

### If you are using the ADB v.2 Access version:

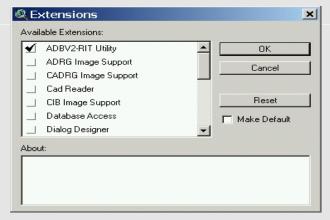
- A. Select **Microsoft Access Driver** from the list of drivers. Click **Finish**.
- B. Now click on **Select** and locate the ADB data file. Select it and click **OK**. In the **Data Source Name** text box type "**ADB2\_RIT**".
- C. Press **OK** to register the database.

# If you are using the ADB v.2 SQL server version:

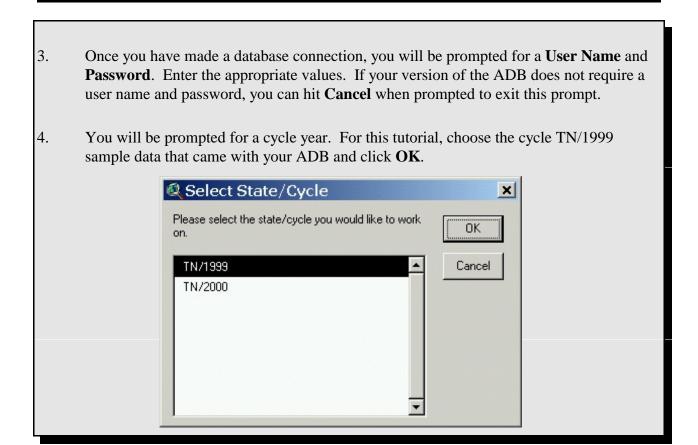
- A. Select the **SQL Server Driver** from the list of drivers. Click **Finish**.
- B. In next dialog box enter **ADB2\_RIT** as the name and enter (**Local**) as the server. Click **Next**.
- C. In the next dialog box, choose the radio button next to **With windows NT** authentication using the network login ID. Click Next.
- D. In the next dialog box, check the box next to **Change default database to:**, and choose **ADB** from the drop-down menu. Click **Next**.
- E. Click **Finish** in the next dialog box.
- F. In the **ODBC Microsoft SQL server setup** dialog box, click on the **Test Data Source** button. A new window should open telling you that your test was completed successfully. Click **OK** to close that window and then Click **OK** again.
- Click OK to exit the ODBC Data Source Administrator. Exit the Control Panel.

### **Opening the ADBv2-RIT**

- 1. Open a new ArcView project. Open a new **View** and choose **Extensions...** from the **File** menu.
- 2. Check the box labeled **ADBv2-RIT Utility**. Click **OK**.



*Note:* If you have not set up an ODBC connection called ADB2\_RIT, you will be prompted to select a data source. If prompted, follow the instructions on the previous page to configure your connection. If you do not set up a connection, you will be unable to use the ADBv2-RIT utility.



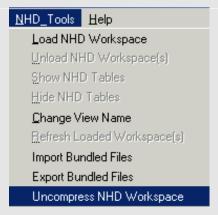
### **Getting Started**

Before using the ADBv2-RIT, you will need to load an NHD workspace and an NHD event table containing 305(b) assessment units into your **View**. When you use the ADBv2-RIT, all of the NHD-RIT tools are available to you, so you can create an event table or edit an existing table as part of your ADBv2-RIT session.

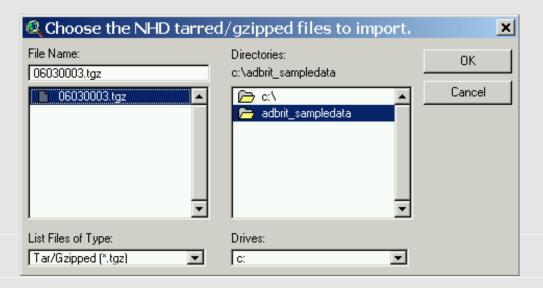
# **Loading NHD**

NHD is distributed as tarred and compressed workspaces (.tgz). Before you can load a workspace with the NHD-RIT, it must be decompressed.

1. Select **Uncompress NHD Workspace** from the **NHD\_Tools** menu.



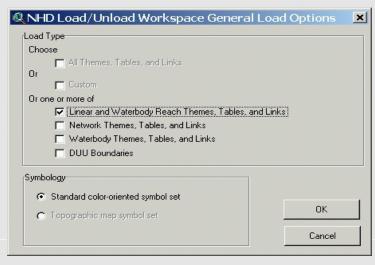
2. Navigate to your **adbrit\_sampledata** directory and select the following NHD workspace. Click **OK**.



A DOS window will appear as the NHD-RIT decompresses the workspace. Once the DOS window closes, a **Done** window will appear. Click **OK**.

**Note:** If the DOS window does not close after the workspace is decompressed, right click on the title box of the DOS window and choose **Properties** from the pop-up menu. Click on the **Close on Exit** check box and click **OK**. Close the DOS dialog.

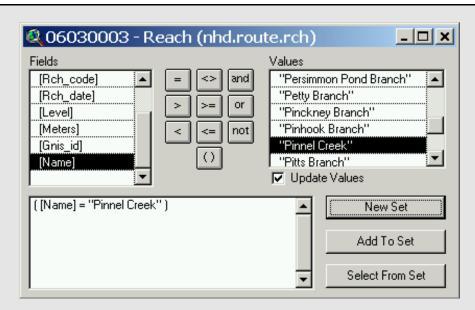
- 3. Choose **Load NHD Workspace** from the **NHD\_Tools** menu. Navigate to the **adbritsample\_data/06030003** folder. Select the "**openme.txt**" file and click **OK**.
- 4. Select Linear and Waterbody Reach Themes, Tables, and Links from the General Load Options dialog and click OK.



Now that the NHD reach themes are loaded and in your **View**, you can create an event theme to store the geographic location of the assessment units in your ADB. If you already have event tables containing this information, you can load them into your project and begin working with this information. For this tutorial, we will be creating a new event table.

### **Creating a new NHD Event Table**

1. The first assessment unit is made up of Pinnel Creek and its tributaries. To find Pinnel Creek, make the **06030003 - Reach** theme active and select **Query** from ArcView's **Theme** menu. Fill in the dialog as shown below.



Click **New Set** and close the **Query** dialog. Select **Zoom to Selected** from the **View** menu. Pinnel Creek is shown in yellow.



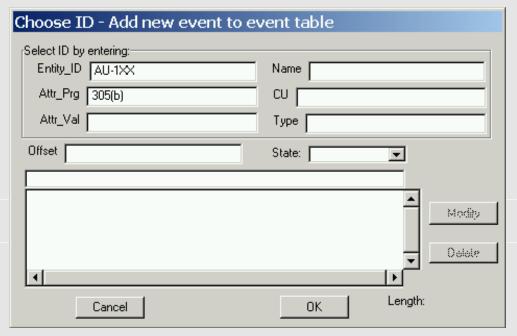
Selection of Pinnel Creek Tributaries

2. Click on the **ArcView Select Feature Tool** and select the tributaries of Pinnel Creek. You can hold down your mouse button and draw a box over this area to make your selection as shown below.

# **ArcView Select Feature Tool:**

3. When you are satisfied with your selection, click on the **Add New Event(s) or Entire Waterbody(ies)** button (the blue A). You will get a message that says "No event table could be located for the current route. Please select or create one." Click **OK**.

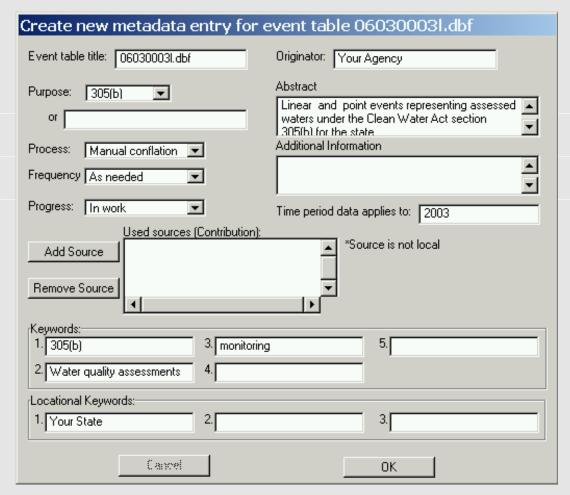
- 4. On the next dialog, make sure the **Create new event/waterbody table** option is selected and click **OK**
- 5. Next you will be prompted for the Entity ID. The value you type here should be the same as the assessment unit ID you will use in the ADB v.2. Fill out this dialog as shown below. Click **OK**.



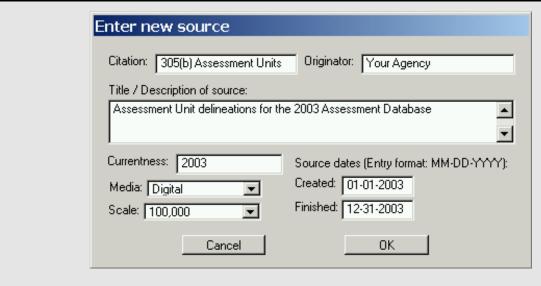
**Note:** If you are using this tutorial in a classroom setting, you may be assigned a letter to avoid conflicts with the other students when accessing the database. If you have been assigned a letter, use it every time you see "XX" used in the Entity ID.

- 6. You will be prompted for a name and storage location for your event table. The default values are fine, so click **OK**.
- 7. You will be prompted to select a **Project View**. Make sure **Work in Decimal Degrees** (unprojected View) is selected and click **OK**.
- 8. Next you are notified that no metadata are available. Click **Create New**. If necessary, enter new user information and click **OK**. Select your name from the **User List** and click **Select**.

9. Fill out the **Metadata Entry Screen** as shown below. Then click on the **Add Source** button.

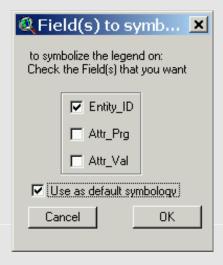


Click **OK** to create a new source. Enter the information shown in the following figure.



Click **OK**. Select the **305(b) Assessment Units** item from the sources list and click **Select**. Click **OK** on the metadata dialog screen. The Pinnel Creek assessment unit is added to your event theme.

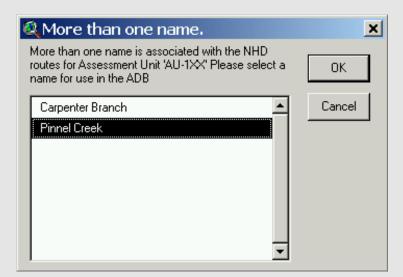
10. Select **Change Legend Symbology** from the **NHD-RIT** menu. Check the box next to **Entity\_ID** and the box next to **Use as default symbology**. Click **OK**. This will classify your event theme by assessment unit ID.



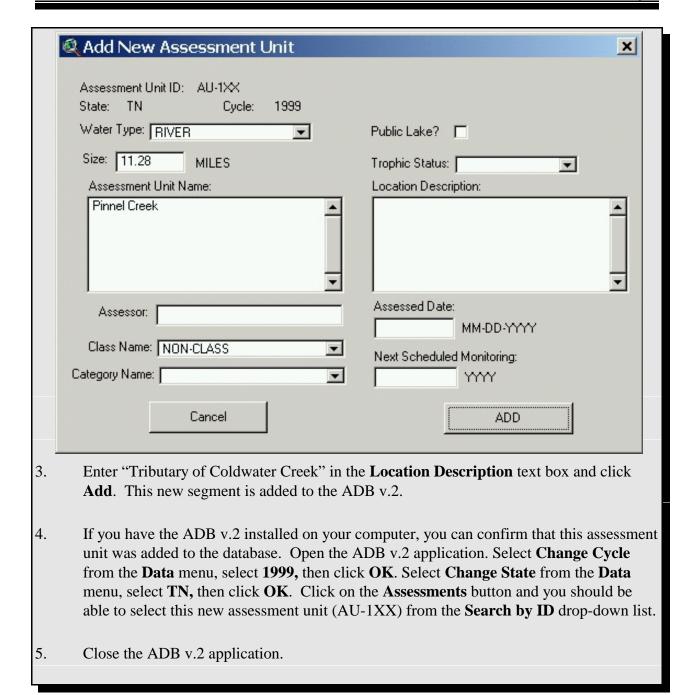
# Adding the Assessment Unit to the ADB v.2

With the ADBv2-RIT utility you can select assessment units that have been georefereneed to NHD and add them directly to your ADB v.2 database. Some of the data required in the ADB v.2 can be obtained from NHD based event tables.

1. Make the **06030003l.dbf** theme active. Click on the blue **ADB** button, and then click on your assessment unit in the **View**. The NHD for your assessment unit has more than one name in NHD (because of the tributaries), so you will be prompted to select a name. Select **Pinnel Creek** and then click **OK**.



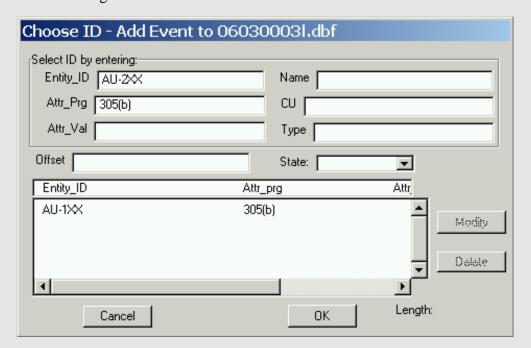
2. The ADBv2-RIT utility checks to see if the selected assessment unit is in your ADB v.2. If it is not found, the **Add New Assessment Unit** dialog opens. The size available in the dialog reflects the size that was calculated using the extent of the assessment unit you delineated using NHD. If you choose, you can change this size or select a different water type. Note that if you change the water type such that the size in miles is not appropriate, the size is removed from the dialog. **Trophic Status** and the **Public Lake** designation are only available if you select a water type that is classified as a lake, reservoir or pond. **Assessment Unit Name** and **Location Description** are required to add a new assessment unit to the ADB v.2. You also have the option of entering an **Assessor**, the **Assessed Date and Next Scheduled Monitoring** year if you wish. For states that use classes as part of their designated uses, you can select a class name from the drop-down list (for states that do not use classes, this list will be empty). You can also select your own state defined categories. You can create state defined categories using the ADB v.2.



# **Updating an Assessment Unit**

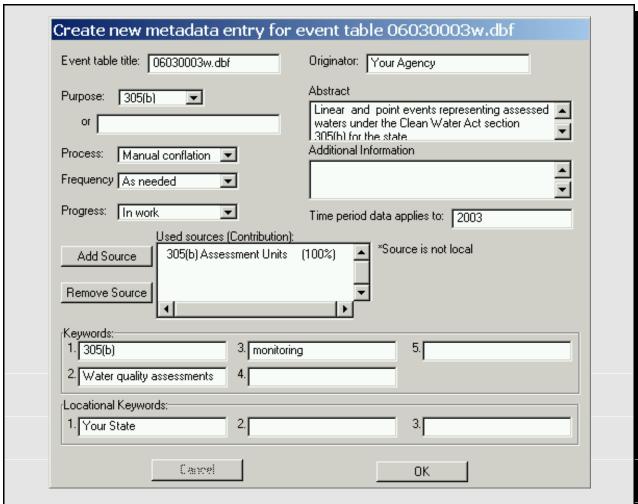
In addition to adding assessment units to your ADB, you can update existing assessment units. For this tutorial, we'll add another assessment unit to our event table, and then update it to include additional information.

1. Return to your ArcView project. Make the **06030003 - Reach** theme active and query for "Corn Branch". Click on **New Set** and close the **Query** dialog. Select **Zoom to Selection** from the **View** menu. Click on the **Add new linear event(s) or entire waterbody(ies) button** (the blue A) to add this stream to your event table. Fill out the **Choose ID** dialog box as shown below and click **OK**.

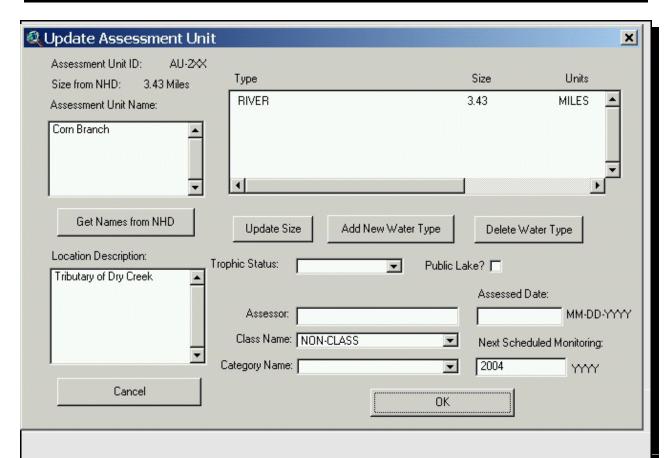


- 2. Now make the **06030003l.dbf** theme active, click on the blue **ADB** button and then click on this new segment in your **View**.
- 3. The **Add New Assessment Unit** dialog will open. Type "Tributary of Dry Creek" in the **Location Description** box and click **Add**. Now Corn Creek is entered as an assessment unit in the ADB v.2.

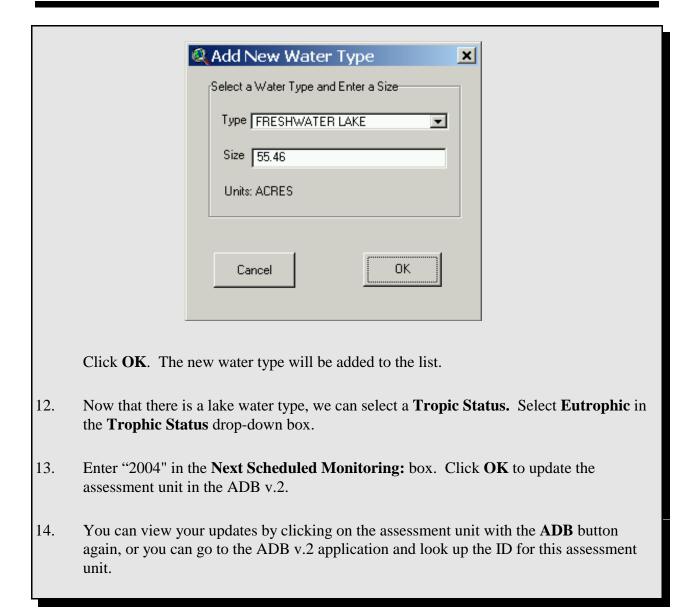
- 4. We can use the NHD-RIT to include the waterbody polygons in NHD in the assessment units as well. Make the **06030003 Waterbody Reach** theme active and query for **[Name] = Ramsey Lake**. Click **New Set** and close the **Query** dialog.
- 5. Click on **Add Linear Event(s) or Entire Waterbody(ies)** button (the blue A). You will be notified that there is no waterbody table. Click **OK**. Make sure **Create New Event/Waterbody Table** is selected and click **OK**.
- 6. In the **Choose ID** dialog, enter "AU-2XX" for the **Entity ID**, and "305(b)" for the **Attr Prg**. Click **OK**.
- 7. You will be prompted for a name and storage location for the new table. The defaults are fine, so click **OK**.
- 8. You will be notified that no metadata are available. Click **Create New**. Fill out the metadata as shown in the following image. You will need to click on the **Add Source** button to select the **305(b) Assessment Units** entry. Click **OK** when you are finished.



9. A new theme will be added to your **View** and Ramsey Lake will be shown in red. Make the **06030003w.shp** theme active. Click on the blue **ADB** button, then click on the lake. Since we have already added this assessment unit ID to the ADB v.2 database, the **Update Assessment Unit** dialog opens. The ADB v.2 allows assessment units to include more than one water type, so we will add this lake to the assessment unit.



- 10. Click in the **Assessment Unit Name** box and add "Including Ramsey Lake" to "Corn Branch."
- 11. Click on the **Add New Water Type** button. Select "Freshwater Lake" from the type drop-down. Notice that the previous dialog gave us a size in acres for Ramsey Lake from NHD. Enter this size (55.46) into the **Size** box.

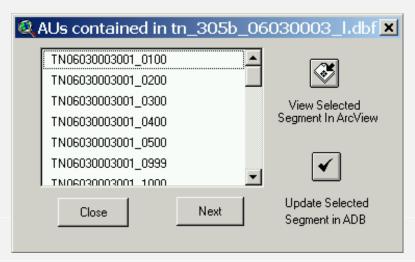


### The Walk-Thru AU's Feature

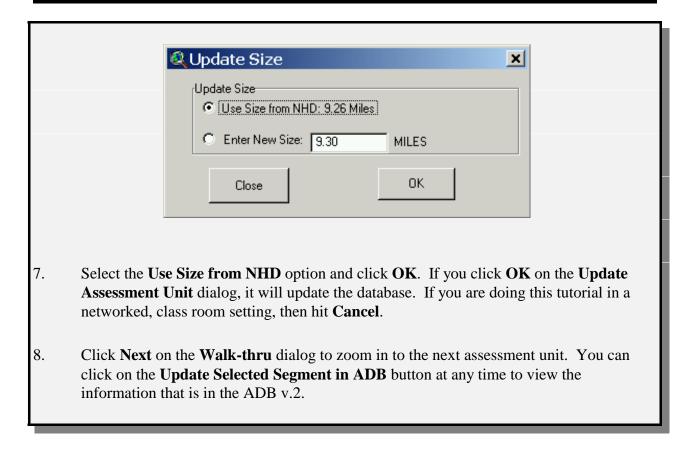
The ADBv2-RIT utility has a **Walk-Thru AU's** feature that will allow you to look at each AU in an event table and compare it to the information the ADB v2.

- 1. Choose **Load NHD Event Theme** from the **NHD-RIT** menu.
- 2. Make sure the **Load Existing Event/Waterbody Table** option is selected and click **OK**.

- 3. Select the event table called **tn\_305b\_06030003\_l.dbf** in your **adbrit\_sampledata** directory and click **OK**. The event table is loaded into your view. This event table contains delineations for some of the assessment units that are in the TN sample data.
- 4. Make the tn\_305b\_06030003\_l.dbf theme active. Select Walk-thru AU's from the ADB-RIT Utility menu. A dialog opens showing a list of all of the assessment unit ID's in this theme. You can select one, or step through them sequentially.



- 5. Select the entry for TN06030003001\_0400 and click View Selected Segment in ArcView. Your View will zoom to this assessment unit. Click on the Update Selected Segment in the ADB button.
- 6. Notice that the size from NHD for Molino Creek is 9.26 miles and the size entered in the database is 9.00 miles. If you knew the information from NHD was better than the information used to populate the database, you could update this information. Select the **RIVER PERRENIAL** water type from the list and click on **Update Size**.



# **Summary**

Congratulations! You have successfully completed the ADBv2-RIT utility tutorial. These exercises should provide you with an understanding of how to use this ArcView extension to assist you in your 305(b) assessment efforts.

If you or your staff need any assistance in using the ADBv2-RIT utility, contact the EPA's Tech Support hotline at 1-800-844-0638 or <a href="mailto:owsupport@rti.org">owsupport@rti.org</a> with any questions concerning this ArcView extension.